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of Transportation

**National Highway
Traffic Safety
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

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*** *** ***



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DYNAMIC SCIENCE, INC.
In-Depth Crash Investigation

Contract DTNH22-94-D-27058
Case DSI-96-AB-09

1997

Technical Report Documentation Page

1. Report No. DS9609		2. Government Accession No.		3. Recipient Catalog No.	
4. Title and Subtitle In-Depth Crash Investigation				5. Report Date	
				6. Performing Organization Report No.	
7. Author(s) Dynamic Science, Inc.				8. Performing Organization Report No.	
9. Performing Organization name and Address Dynamic Science, Inc. 530 College Parkway, Ste. K Annapolis, MD 21401				10. Work Unit No. (TRAIS)	
				11. Contract or Grant no. DTNH22-94-D-27058	
12. Sponsoring Agency Name and Address U.S. Dept. of Transportation (NRD-32) National Highway Traffic Safety Administration 400 7th Street, SW Washington, DC 20590				13. Type of report and period Covered [Report Month, Year]	
				14. Sponsoring Agency Code	
15. Supplemental Notes					
16. Abstract <p>This case was initiated in response to a report of air bag-related serious head injuries to a child in the right front passenger seat. This collision occurred in the state of . The weather was clear, but the bituminous roadway was wet at the time of the collision. Vehicle 1, a 1995 Pontiac Grand Prix driven by a 24-year-old female, was traveling eastbound on a 6-lane undivided roadway which first approaches a southbound side street and then an interstate on-ramp. The vehicle was in the lane closest to the right-hand curb and was traveling at a police estimated speed of 32 km/h (20 MPH). A four-year-old male was seated in the right front seat. The driver was wearing her seatbelt according to both the police and the on-board diagnostic module. The four-year-old who is 110 cm (43.3 in.) tall and weighs 18 kg (39.7 lbs.) was wearing the lap portion of the lap and shoulder belt. Restraint use for this occupant was indicated by some slight loading of the belt, a blood drip location consistent with the lap portion being in place, plus an interview with an off duty deputy sheriff who participated in the rescue effort and who stated that the shoulder portion was behind this occupant's back. Additionally, there was physical evidence in the vehicle which places the occupant's right hand near the windshield, presumably attempting to stop himself from going forward. Vehicle 2, a 1990 Ford Bronco driven by a 32-year-old male, was initially stopped facing westbound in the center turn lane, intending to turn left (south) onto the side street. Vehicle 3, a 1996 Saturn SL driven by an 18-year-old male, was stopped on the side street facing north. As Vehicle 1 approached the intersection, traffic in the adjacent two lanes was stopped. There was a break in traffic for those cars west of the intersection and east of the intersection and they allowed Vehicle 2 to begin his left hand turn. The driver of Vehicle 1 indicated that she saw Vehicle 2 enter the lane and braked. As Vehicle 2 entered the southernmost travel lane it was struck in the right front by the left front of Vehicle 1. Both air bags in Vehicle 1 deployed at this time. Vehicle 1 veered slightly to the right and came into contact with Vehicle 3. There was little if any damage related to this impact. Vehicle 2 was pushed in a sharp counterclockwise rotation and came to rest in the intersection facing east. According to the police report, none of the drivers were injured. The right front passenger of Vehicle 1, however, did suffer some serious injuries. The attending physician listed the following injuries: a subdural hematoma, a hemorrhage on the right side of the brain, a fracture to the right humerus, and abrasions to the right side of his forehead. Witnesses indicated that this occupant also sustained contusions/abrasions to the top of the right hand/wrist area, and abrasions/contusions to this occupant's face. The facial and head injuries appear to have come about as a result of contact with the air bag. The right hand and upper arm injuries resulted from the occupant's hand becoming trapped between the module cover and the windshield during deployment. Immediately after the crash, it was determined that the child was not breathing, there was no pulse, and that there was considerable bleeding from her head. CPR was applied by motorists on the scene and the child began breathing. Paramedics arrived shortly thereafter and the child was transported by air to a trauma center where he was listed in critical condition.</p>					
17. Key Words Air bag, deployment, injury, crash, passenger.			18. Distribution Statement		
19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No of pages	22. Price		

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points be coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

DYNAMIC SCIENCE, INC.
CRASH INVESTIGATION
CASE NUMBER: DS9609

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TECHNICAL SUMMARY

CONTRACTOR: Dynamic Science, Inc.
CONTRACT NUMBER: DTNH22-94-D-27058
CASE NUMBER: DSI-96-AB-09

This case was initiated in response to a report of airbag-related serious head injuries to a child in the right front passenger seat.

This collision occurred on _____ 1996 at 1553 hours in the state of _____. The weather was clear, but the bituminous roadway was wet at the time of the collision. There was heavy traffic for the east/west travel lanes.

Vehicle 1, a 1995 Pontiac Grand Prix driven by a 24-year-old female, was traveling eastbound on a 6-lane undivided roadway which first approaches a southbound side street and then an interstate on-ramp. The vehicle was in the lane closest to the right-hand curb and was traveling at a police estimated speed of 32 km/h (20 MPH). A four-year-old male was seated in the right front seat. The driver was wearing her seatbelt according to both the police and the on-board diagnostic module. The four-year-old who is 110 cm (43.3 in.) tall and weighs 18 kg (39.7 lbs.) was wearing the lap portion of the lap and shoulder belt. Restraint use for this occupant was indicated by some slight loading of the belt, a blood drip location consistent with the lap portion being in place, plus an interview with an off duty deputy sheriff who participated in the rescue effort and who stated that the shoulder portion was behind this occupant's back. Additionally, there was physical evidence in the vehicle which places the occupant's right hand near the windshield, presumably attempting to stop himself from going forward. Vehicle 2, a 1990 Ford Bronco driven by a 32-year-old male, was initially stopped facing westbound in the center turn lane, intending to turn left (south) onto the side street. Vehicle 3, a 1996 Saturn SL driven by an 18-year-old male, was stopped on the side street facing north.

As Vehicle 1 approached the intersection, traffic in the adjacent two lanes was stopped. There was a break in traffic for those cars west of the intersection and east of the intersection and they allowed Vehicle 2 to begin his left hand turn. The driver of Vehicle 1 indicated that she saw Vehicle 2 enter the lane and braked. As Vehicle 2 entered the southernmost travel lane it was struck in the right front by the left front of Vehicle 1. Both airbags in Vehicle 1 deployed at this time. The computed delta V was 8 MPH, while the maximum possible delta V was determined to be 13 MPH (based on data from the on-board diagnostic module). Vehicle 1 veered slightly to the right and came into contact with Vehicle 3. There was little if any damage related to this impact. Vehicle 2 was pushed in a sharp counterclockwise rotation and came to rest in the intersection facing east.

According to the police report, none of the drivers were injured. The right front passenger of Vehicle 1, however, did suffer some serious injuries. The attending physician listed the following injuries: a subdural hematoma, a hemorrhage on the right side of the brain, a fracture to the right humerus, and abrasions to the right side of his forehead. Witnesses indicated that this occupant also sustained contusions/abrasions to the top of the right hand/wrist area, and abrasions/contusions to this occupant's face. The facial and head injuries appear to have come

about as a result of contact with the airbag. The right hand and upper arm injuries resulted from the occupant's hand becoming trapped between the module cover and the windshield during deployment.

Immediately after the accident, it was determined that the child was not breathing, there was no pulse, and that there was considerable bleeding from his head. CPR was applied by motorists on the scene and the child began breathing. Paramedics arrived shortly thereafter and the child was transported by air to a trauma center where he was listed in critical condition on the morning of /96. This condition was upgraded to serious as of 1510 hours on /96. On '96, his condition remained serious but his breathing was no longer being assisted. The child was released from the trauma center on /96.

Vehicles 1 and 2 were towed from the scene and placed in secure storage by the local police department.

Crash DATA:

Location:

Area/Type:

Urban

Date/Time:

1996 / 1553 hours

Crash Type:

Vehicle to Vehicle / Front to side

Injury Severity:

Vehicle 1:

Driver not injured
RF occupant, AIS=4

Vehicle 2:

Driver not injured

Vehicle 3:

Driver not injured
RF occupant not injured

AMBIENCE:

Viewing Conditions:

Generally poor. Vehicles 1 and 2 would not be visible to the respective drivers until Vehicle 2 would have pulled into the travel lane.

Cloud Cover:

Light

Precipitation:

None

Temperature:

1550 hours 3° C (37.3° F)

Road Surface:

Wet

ROADWAY:

	VEHICLE 1	VEHICLE 2	VEHICLE 3
Type:	Combination business/ residential	Combination business/ residential	Combination business/ residential
Width:	23.4 M (76.8 ft.)	23.4 M (76.8 ft.)	12.2 M (40 ft.)
Traffic Density:	Heavy	Heavy	Heavy
Median:	None	None	None
Edge:	Raised concrete curb	Raised concrete curb	Raised concrete curb
Surface:	Bituminous	Bituminous	Bituminous
Reported Defects:	None	None	None
Co-efficient of Friction (est.):	0.50	0.50	0.50
Vertical Alignment:	Level	Level	Slight positive
Horizontal Alignment:	Straight	Straight	Straight

Traffic Controls:

	VEHICLE 1	VEHICLE 2	VEHICLE 3
Signals:	None	None	None
Signs:	Freeway on-ramp indicator signs	None	Stop sign
Speed Limit:	64 km/h (40 MPH)	64 km/h (40 MPH)	40 km/h (25 MPH)
Markings:	Bordered on the left by a solid white line and on the right by a raised curb	Bordered on both sides by solid/dotted lines	None

VEHICLES:

	VEHICLE 1	VEHICLE 2	VEHICLE 3
Description:	1995 Pontiac Grand Prix four-door	1990 Ford Bronco 2 door (Eddie Bauer Edition)	1996 Saturn SLI
Odometer:	54,904 km (34,117 miles)	152,277 km (94,623 miles)	Unknown
Engine:	3.1 L V6	5.0 L V8	1.9 L I4
Vehicle Modifications:	None	None applicable	None
Tire Condition:	Good	Good	Unknown
Manual Restraints:	Lap and shoulder 3-pt. single loop seatbelt for LF, Lap and shoulder 3 pt. single loop seatbelt with child cinch retractor for RF/LR/RR, manual lap belt for MR.	Lap and shoulder belts for LF and RF. Lap only for RR/LR/MR.	Unknown
Automatic Restraints:	Supplemental Restraint System (driver's and right front passenger's side air bags)	None	Unknown
Reported Defects:	None	None	None
Cargo:	None	None	Unknown
Windshield Damage:	Damaged by air bag module cover and right arm of passenger.	None	None
Fleet:	NA	NA	NA
Tow Status:	Towed, not due to damage	Towed, not due to damage	Driven from scene

VEHICLE DAMAGE:

	VEHICLE 1	VEHICLE 2	VEHICLE 3
Object Struck:	02	01	01
Event Number:	01	01	02
CDC:	12FYEW1	02RFEW1	09LFLU1 ¹
Maximum Crush:	11 cm (4.3 in.) @ C ₂	Zone 1	No residual deformation

VEHICLE VELOCITY ESTIMATES:

	VEHICLE 1	VEHICLE 2
Impact Speed: (estimated)	32 km/h (20 MPH) ²	8 km/h (5 MPH)
Total Delta V:	13 km/h (8 MPH)	10 km/h (6 MPH)
Longitudinal Delta V:	-13 km/h (-8 MPH)	-3 km/h (-2 MPH)
Lateral Delta V:	1 km/h (0 MPH)	-9 km/h (-6 MPH)
Energy Dissipation:	13381 joules (9868 Ft-Lb)	6610 joules (4874 Ft-Lb)

¹Estimated from police photos

²Police Estimate

COLLISION SEQUENCE:**Pre-Crash:**

Vehicle 1, a 1995 Pontiac Grand Prix driven by a 24-year-old female, was traveling eastbound on a 6-lane undivided roadway which first approaches a southbound side street and then an interstate on-ramp. The vehicle was in the lane closest to the right-hand curb and was traveling at a police estimated speed of 32 km/h (20 MPH). A four-year-old male was seated in the right front seat. Vehicle 2, a 1990 Ford Bronco driven by a 32-year-old male, was initially stopped facing westbound in the center turn lane, intending to turn left (south) onto the side street. Vehicle 3, a 1996 Saturn SL driven by an 18-year-old male, was stopped on the side street facing north.

Crash:

As Vehicle 1 approached the intersection, traffic in the adjacent two lanes was stopped. There was a break in traffic for those cars west of the intersection and east of the intersection and they allowed Vehicle 2 to begin his left hand turn. The driver of Vehicle 1 indicated that she saw Vehicle 2 enter the lane and braked. As Vehicle 2 entered the southernmost travel lane it was struck in the right front by the left front of Vehicle 1. Both airbags in Vehicle 1 deployed at this time. The computed delta V was 8 MPH, while the maximum possible delta V was determined to be 13 MPH (based on data from the on-board diagnostic module).



Figure 1. Vehicle 1, 1995 Pontiac Grand Prix

Post Crash:

Vehicle 1 veered slightly to the right and came into contact with Vehicle 3. There was little if any damage related to this impact. Vehicle 2 was pushed in a sharp counterclockwise rotation and came to rest in the intersection facing east. Vehicles 1 and 2 were towed from the scene and placed in secure storage by the local police department.

Occupant Kinematics:

The driver was wearing her seatbelt according to both the police and the on-board diagnostic module. The four-year-old was wearing the lap portion of the lap and shoulder belt. The lap portion rides approximately 9 cm (3.5 in.) above the seat bottom. The seat was 15.5 cm (6.1 in.) behind the full forward position-all the way back. Prior to the collision, the driver of Vehicle 1 braked. Both the driver and the right front passenger would have initially pitched forward to

some degree--the right front passenger more so since he was not wearing the shoulder portion. The right front passenger rotated over the lap belt and went forward to a sufficient degree that his right hand was above the airbag module. At deployment, the driver engaged the airbag fully and did not sustain any injuries. The right front occupant's right hand was trapped between the airbag module cover and the windshield at deployment. His face was struck by the not-fully-deployed airbag. He was then pushed upward and backward. It is not known where he initially came to rest. There is evidence that the left side of his head was lying on the center console/armrest, but the driver may have pulled him towards her.

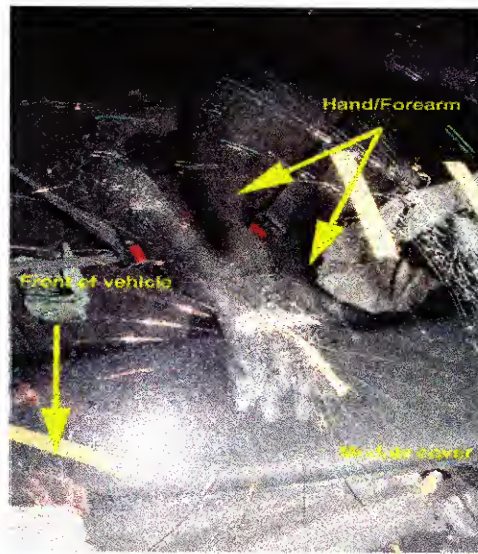


Figure 2. Windshield contact/right hand

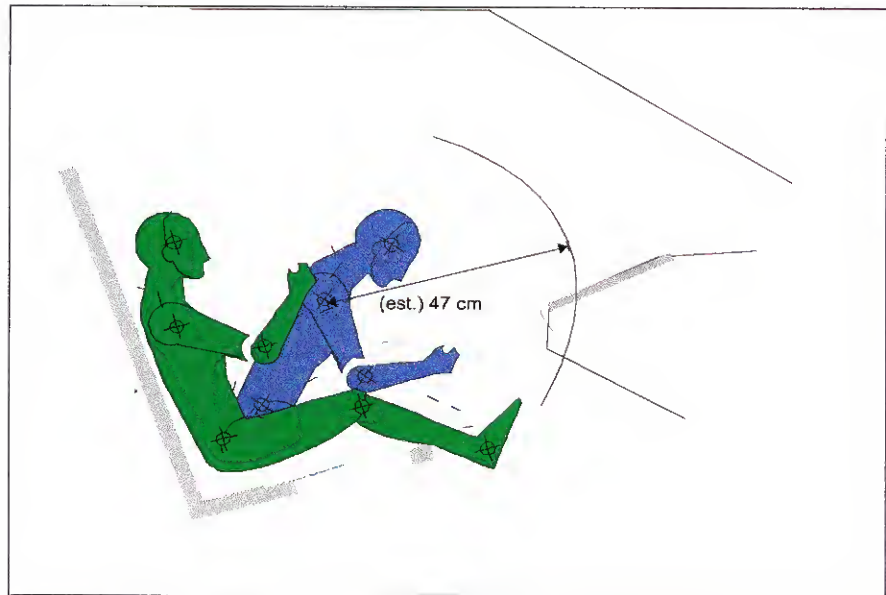


Figure 3. RF Occupant Kinematics



Figure 4. Windshield damage measurements

Air bag System: Vehicle 1 was equipped with both driver's side and passenger side supplemental restraint systems. Data stored in the Sensing Diagnostic Module (SDM)³ was analyzed and interpreted by General Motors. The SDM recorded and stored a crash event which contained the following information:

- The SIR Warning Light was OFF at the time of the deployment. (No malfunctions).
- The SIR Warning Light was not ON prior to the crash. (No malfunctions).
- There were three SIR system codes stored in memory. (These codes are associated with a normal air bag deployment event).
- The air bags deployed 38.75 milliseconds after the collision was first detected by the SDM.
- The maximum change in velocity (Delta V) the SDM recorded was 13.27 MPH.
- The crash occurred on ignition cycle number 3748. This is eleven (11) cycles prior to when the SDM was read on 11/12/96 (3759).
- This was the first Deployment Crash Event for this vehicle.
- The driver's seat belt was latched at the time the deployment occurred.

The driver's side air bag is 56.5 cm in diameter. The module cover opens using an I-pattern.

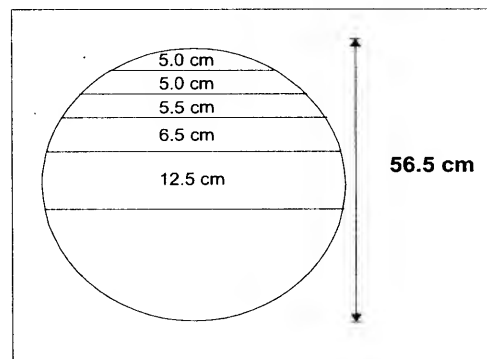


Figure 5. Driver's side air bag

³The SDM is the electrical component of the Supplemental Inflatable Restraint (SIR) system that functions to diagnose and record SIR information.

The right front airbag is 60 cm wide. The module cover is attached to the instrument panel with a nylon strap. At deployment, the module cover will lift up and strike the windshield--as it did in this case. A small metal fragment was found embedded in the fabric of the airbag.



Figure 6. Right front module cover, facing forward



Figure 7. Right front module cover, facing laterally

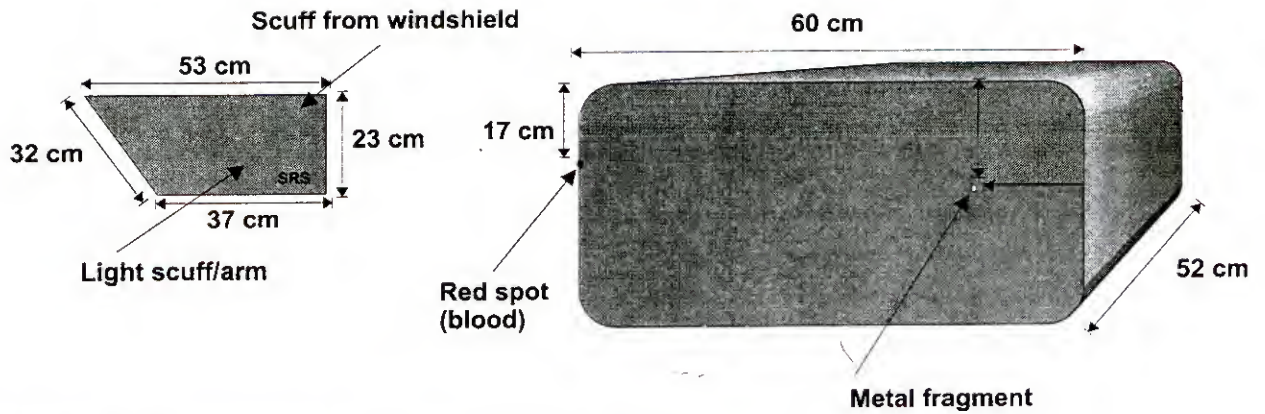


Figure 8. Passenger side airbag and module cover

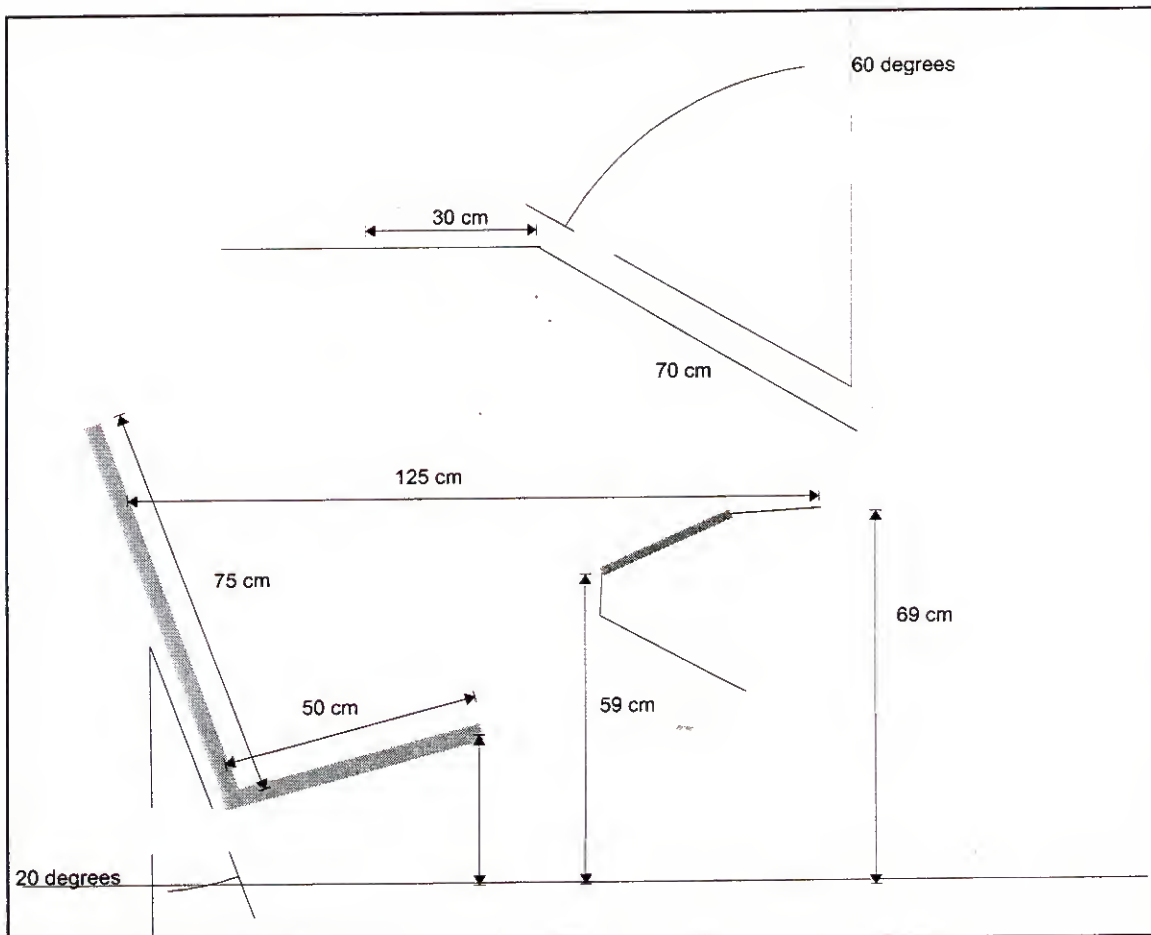


Figure 9. Interior dimensions

Scene Clearance: Immediately after the crash, it was determined that the child was not breathing, there was no pulse, and that there was considerable bleeding from her head. CPR was applied by motorists on the scene and the child began breathing. Paramedics arrived by ground transport shortly thereafter and the child was transported by air to a trauma center where he was listed in critical condition. This was upgraded to serious two days later.

Crash	1553
EMS dispatched	1554
EMS arrived at scene	1554
EMS depart scene	1653 (ground transport)

Safety Standards: There were no violations of Federal Motor Vehicle Safety Standards and Regulations found during the inspection of the case vehicle.

DRIVER AND OTHER OCCUPANTS:**VEHICLE 1**

	DRIVER	OCCUPANT 2
Age/Sex:	24/Female	4/Male
Seated Position:	Left front	Right front
Seat Type:	Bucket	Bucket
Height:	Unknown	110 cm (43 in.)
Weight:	Unknown	18 kg (39.7 lbs.)
Occupation:	Unknown	NA
Pre-existing Medical Condition:	Unknown	None known
Alcohol/Drug Involvement:	None	None
Driving Experience:	8 years	NA
Body Posture:	Unknown	Unknown
Hand Position:	Unknown	Unknown
Foot Position:	Right foot on brake, left presumably on floorboard	Unknown
Restraint Usage:	Lap and shoulder belts used. Usage confirmed during field inspection and information provided from on-board diagnostic module	Lap only used. Usage determined by field inspection which show a small amount of loading, a drop of blood on the outward facing part of the engaged lap belt, and interviews with on-scene witnesses.

DRIVER AND OTHER OCCUPANTS (con't):**VEHICLE 2****DRIVER**

Age/Sex:	32/Male
Seated Position:	Left front
Seat Type:	Bucket with folding back
Height:	Unknown
Weight:	Unknown
Occupation:	Unknown
Pre-existing Medical Condition:	Unknown
Alcohol Involvement:	None
Driving Experience:	14 years
Body Posture:	Unknown
Hand Position:	Unknown
Foot Position:	Right foot on accelerator, left presumably on floor
Restraint Usage:	Lap and shoulder used
Additional Occupants:	None

DRIVER AND OTHER OCCUPANTS (con't):**VEHICLE 3**

	DRIVER	OCCUPANT 2
Age/Sex:	18/Male	18/Female
Seated Position:	Left front	Right front
Seat Type:	Bucket with folding back	Bucket with folding back
Height:	Unknown	Unknown
Weight:	Unknown	Unknown
Occupation:	Unknown	Unknown
Pre-existing Medical Condition:	Unknown	Unknown
Alcohol Involvement:	None	None
Driving Experience:	2 years	NA
Body Posture:	Normal, upright	Normal, upright
Hand Position:	Both on wheel	NA
Foot Position:	Right foot on brake	NA
Restraint Usage:	Lap and shoulder used	Lap and shoulder used
Additional Occupants:	One	None

INJURIES:**Vehicle 1**

	INJURY	OIC CODE	ICD-9	SOURCE, confidence level⁴
DRIVER:	No reported injuries			
R/F OCCUPANT:				
	Subdural hematoma (possibly left side)	140629.4,2	853.0	Airbag, 2
	Intraparietal hemorrhage (possibly right side)	140629.4,1	852.2	Airbag, 2
	Fracture right humerus	752600.2,1	733.11	Module cover, 2
	Forehead abrasion, right	290202.1,7	910.0	Airbag, 1
	Forehead contusion	290402.1,7	920.0	Airbag, 1
	Contusion, right wrist/hand	790402.1,1	923.2	Windshield, 1
	Abrasion, right wrist/hand	790202.1,1	913.0	Windshield ,1
	Abrasions about right eye	297202.1,1	910.0	Airbag, 1
	Abrasions about left eye	297202.1,2	910.0	Airbag, 1
	Abrasion, mouth	290202.1,8	910.0	Airbag, 1
	Abrasion, nose	290202.1,4	910.0	Airbag, 1

⁴1=Certain, 2=Probable, 3=Possible, 4=Unknown

INJURIES:

Vehicle 2

DRIVER: No reported injuries

Vehicle 3

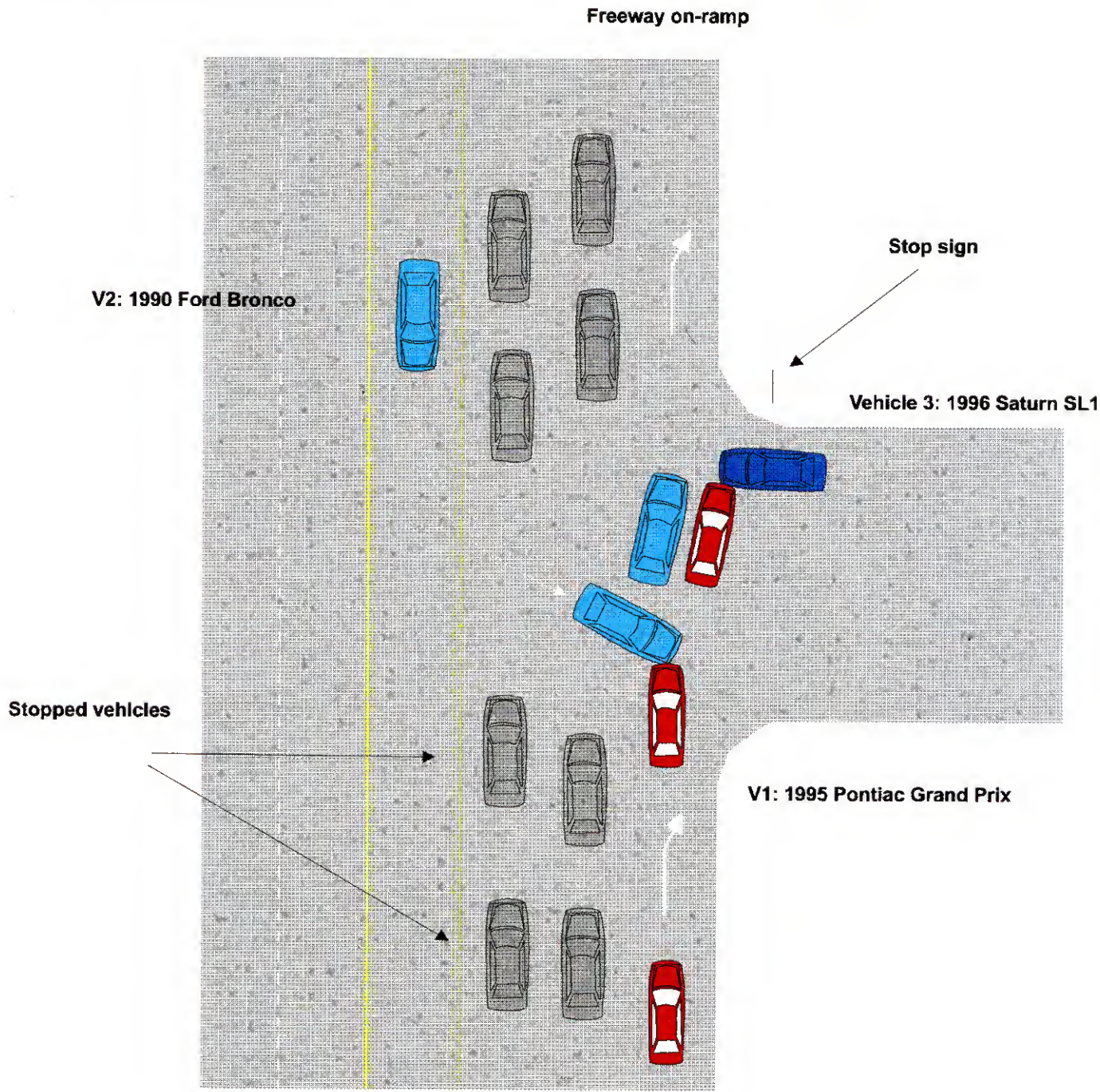
DRIVER: No reported injuries

R/F No reported injuries
OCCUPANT:

Abbreviations Used In Scene And Photographic Documentation

ft	Feet
in	Inches
AIS	Abbreviated Injury Scale
BLF	Begin Left Front
BLR	Begin Left Rear
BRF	Begin Right Front
BRR	Begin Right Rear
CCW	Counterclockwise
CDC	Collision Deformation Classification
CG	Center of Gravity
CM	Centimeter
COE	Cab Over Engine
CW	Clockwise
E, EB	East, Eastbound
ELF	End Left Front
ELR	End Left Rear
ERF	End Right Front
ERR	End Right Rear
FRP	Final Rest Position
I	Interstate Highway
KG	Kilogram
KPH	Kilometers Per Hour
LF	Left Front
LR	Left Rear
M	Meter
N, NB	North, Northbound
NE	Northeast
NW	Northwest
PDOF	Principal Direction of Force
POI	Point of Impact
R	Radius of Curvature
RF	Right Front
RL	Reference Line
RP	Reference Point
RR	Right Rear
S, SB	South, Southbound
SE	Southeast
SW	Southwest
T	Time or Elapsed Time (in seconds)
U.S.	United States Highway
V1	Vehicle Number 1
W, WB	West, Westbound

ACCIDENT DIAGRAM



Case Number: DSI-96-AB-09

← NORTH

Scale: 1" = 20'

COLLISION MEASUREMENTS

Case Number DSI-96-AB-09

Reference Point: West road edge

Reference Line: North road edge

DATA POINT	LONGITUDINALS	LATERALS
Lane 1 (right turn)	0	4.26 M (14 ft.) NRL
Lane 2	0	7.8 M (25.6 ft.) NRL
Lane 3	0	11.3 M (38.2 ft.) NRL
Lane 4	0	16.09 M (52.8 ft.) NRL
Lane 5	0	19.9 M (65.3 ft.) NRL
Lane 6	0	23.4 M (76.8 ft.) NRL
Northbound roadway	12.19 M (40 ft.) ERP	0
Final rest V1		
LF	(1 ft.) NRP	(30 ft.) ERL
LR	(4 ft.) NRP	(21 ft.) ERL
Final rest V2		
LF	(9.6 ft.) NRP	(33 ft.) ERL
LR	(13.6 ft.) NRP	(25.5 ft.) ERL
Final rest V3		
LF	(3.6 ft.) SRP	(32 ft.) ERL
LR	(12 ft.) SRP	(31 ft.) ERL

PHOTO INDEX

Case No. DSI-96-AB-09

PHOTO NO.	VEHICLE NO.	DIRECTION OF PICTURE	SUBJECT MATTER
1-2	1	East	Approach to area of impact.
3	1	East	Area of impact.
4-5	2	West	Approach to area of impact.
6	2	SW	Area of impact.
7	3	North	Approach to area of impact.
8	3	North	Area of impact.
9-19	1-3	-	Police photos showing final rest for all vehicles, as well as rescue activities. Photos 13/17 show contact between Vehicles 1 and 3.
20-39	1	CCW	Exterior of vehicle. Photos 36-39 show damage to windshield. Photo 39 shows imprint of passenger's hand/wrist against the windshield.
40-74	1	NA	Interior of vehicle. Photo 45 shows scuff on module cover. Photos 48-51 show blood drip pattern on center console. Photo 54 shows height of lap portion of right front seatbelt relative to the seat itself. Photos 68-71 show impression to roof surface. Photos 72-73 show metal fragment found in airbag material.
75-77	1	NA	Views of down jacket worn by right front occupant.
78-88	2	CW	Exterior of vehicle.
89-94	2	NA	Interior of vehicle.









AB09-009



AB09-010



AB09-011



AB09-012





















































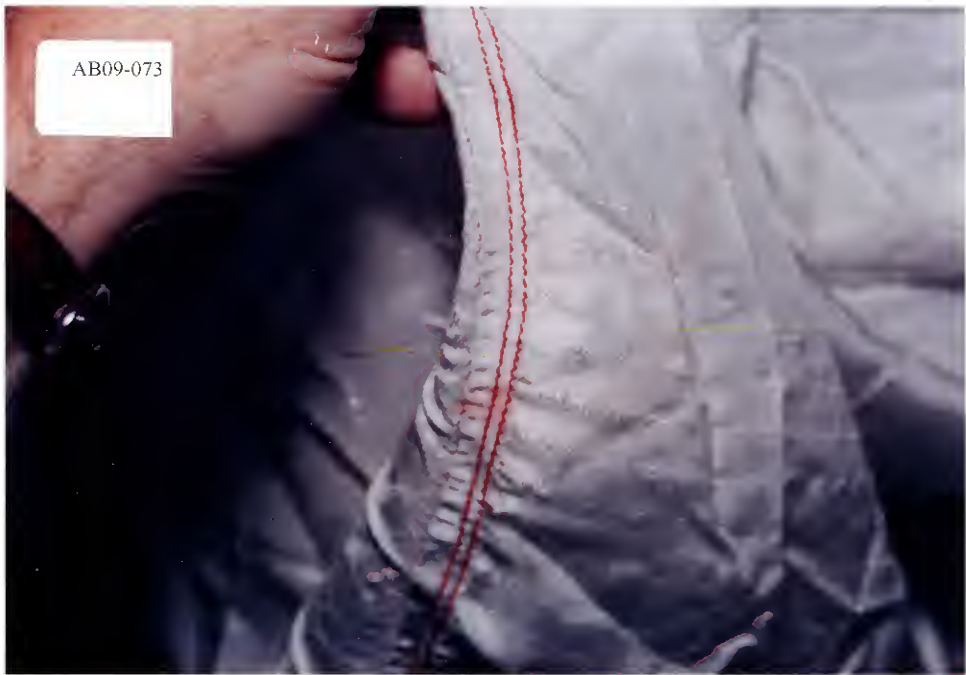


















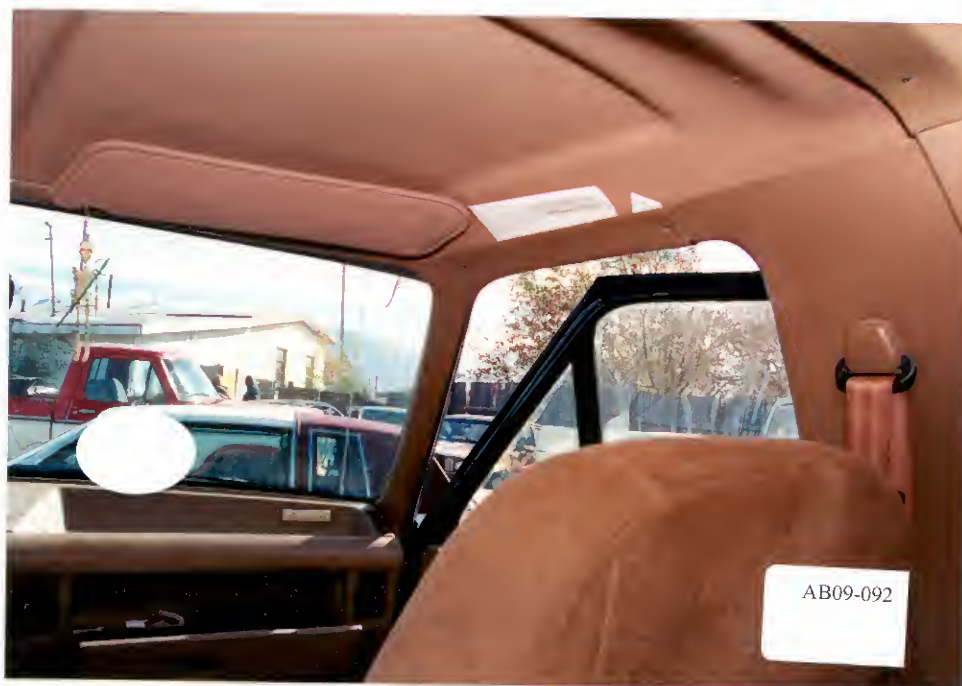


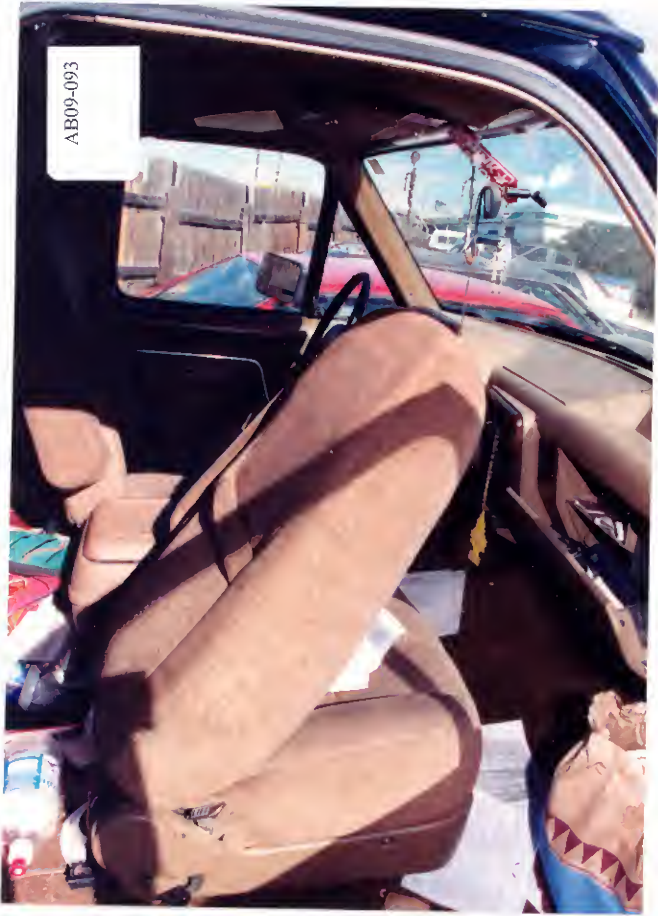














T I M E	MONTH DAY YEAR			DAY OF WEEK		<div style="display: flex; justify-content: space-between;"> <div>1 2 3 4 5 6 7 M T W T F S S</div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> </div>							CASE NUMBER		15			
													BEST AVAILABLE			02		
L O C A T I O N	PLACE WHERE ACCIDENT OCCURRED: COUNTY <u>11</u> CITY OR TOWN <u></u>															FOR AGENCY USE		2
	Accident was outside city limits NORTH S E W indicate distance from city limits or nearest town <u></u> MILES <u></u> of <u></u> CITY OR TOWN															D.I.D. USE ONLY		2
	ROAD ON WHICH ACCIDENT OCCURRED: <u></u> RAMP NO. <u></u> GIVE NAME OF STREET OR HIGHWAY NUMBER INTERSECTION TYPE <u></u>															STATE/LOCAL		02
	1. AT ITS INTERSECTION WITH <u></u> 2. IF NOT AT INTERSECTION NORTH S E W FEET <u></u> of <u></u> TENTH OF A MILE <u></u> OF MILE POST <u></u> NEAREST INTERSECTION, STREET, HOUSE NO. LANDMARK <u></u> BE SURE TO COMPLETE IF ROAD HAS MILE POST																	06
																		21
VEHICLE #		YEAR		MAKE		MODEL		BODY STYLE/TYPE CODE		VEHICLE COLOR		G.V.W.R.		DESC. OF CARGO CODE		COMMERCIAL VEHICLE (Reg 12,000 lbs. or more)		23
																INTERSTATE <input type="checkbox"/> INTRASTATE <input type="checkbox"/>		
VEHICLE IDENTIFICATION NUMBER								DISPOSITION OF VEHICLE				NO. OF AXLES (INCLUDING ALL TRAILERS)		DIR OF TRAVEL		24		
US DOT		LIC. PLATE		YEAR		MONTH		STATE		NUMBER		PARTS DAMAGED		INJURY		COST OF REPAIR		25
OWNER		FIRST		INITIAL		LAST		STREET, CITY, STATE, ZIP, PHONE NO.		PHONE ()		INJURY		CAUTION		EJECTION		26
OPERATOR		FIRST		INITIAL		LAST		STREET, CITY, STATE, ZIP, PHONE NO.		PHONE ()		INJURY		CAUTION		EJECTION		27
DRIVER		FIRST		INITIAL		LAST		STREET, CITY, STATE, ZIP, PHONE NO.		PHONE ()		INJURY		CAUTION		EJECTION		28
DRIVER'S LICENSE		STATE		NUMBER		DATE OF BIRTH		MONTH		DAY		YEAR		AGE		SEX		29
DRIVER'S EDUCATION		1. PUBLIC		3. NONE		2. COM. L.		4. UNKN		YEARS DRIVE EXP.		LICENSE CLASS		ENDORSEMENT		RESTRICTIONS		30
INSURANCE COMPANY				EFFECTIVE DATE				EXPIRATION DATE				POLICY NUMBER				31		
INSURANCE APPEARS VALID		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		AGENCY THAT SOLD POLICY				ADDRESS				PHONE ()				32		
VEHICLE #		YEAR		MAKE		MODEL		BODY STYLE/TYPE CODE		VEHICLE COLOR		G.V.W.R.		DESC. OF CARGO CODE		COMMERCIAL VEHICLE (Reg 12,000 lbs. or more)		33
																INTERSTATE <input type="checkbox"/> INTRASTATE <input type="checkbox"/>		
VEHICLE IDENTIFICATION NUMBER								DISPOSITION OF VEHICLE				NO. OF AXLES (INCLUDING ALL TRAILERS)		DIR OF TRAVEL		34		
US DOT		LIC. PLATE		YEAR		MONTH		STATE		NUMBER		PARTS DAMAGED		INJURY		COST OF REPAIR		35
OWNER		FIRST		INITIAL		LAST		STREET, CITY, STATE, ZIP, PHONE NO.		PHONE ()		INJURY		CAUTION		EJECTION		36
OPERATOR		FIRST		INITIAL		LAST		STREET, CITY, STATE, ZIP, PHONE NO.		PHONE ()		INJURY		CAUTION		EJECTION		37
DRIVER		FIRST		INITIAL		LAST		STREET, CITY, STATE, ZIP, PHONE NO.		PHONE ()		INJURY		CAUTION		EJECTION		38
DRIVER'S LICENSE		STATE		NUMBER		DATE OF BIRTH		MONTH		DAY		YEAR		AGE		SEX		39
DRIVER'S EDUCATION		1. PUBLIC		3. NONE		2. COM. L.		4. UNKN		YEARS DRIVE EXP.		LICENSE CLASS		ENDORSEMENT		RESTRICTIONS		40
INSURANCE COMPANY				EFFECTIVE DATE				EXPIRATION DATE				POLICY NUMBER				41		
INSURANCE APPEARS VALID		YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		AGENCY THAT SOLD POLICY				ADDRESS				PHONE ()				42		
1. PEDESTRIAN		2. BICYCLIST		DATE OF BIRTH		AGE		SEX		INJURY		CAUTION		EJECTION		43		
NAME				ADDRESS				TYPE				CAUSE		AREA		44		

ORIGINAL REPORT

SUPPLEMENTAL REPORT

AMENDED REPORT

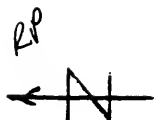


DIAGRAM BY

	EAST CF RL1	NO/SO RF RL2
a-LEFT FRONT TIRE VEH 1	33°	9° N
b-LEFT REAR TIRE VEH 1	25°	13° N
c-LEFT FRONT TIRE VEH 2	30°	1° N
d-LEFT REAR TIRE VEH 2	21°	4° N
e-LEFT FRONT TIRE VEH 3	32°	3° S
f-LEFT REAR TIRE VEH 3	31°	12° S

RL1 IS WEST CURB OF
RL2 IS SOUTH CURB OF

VEHICLE 1: BLUE FORD BRONCO
VEHICLE 2: RED PONTIAC GRAND PRIX
VEHICLE 3: GREEN SATURN

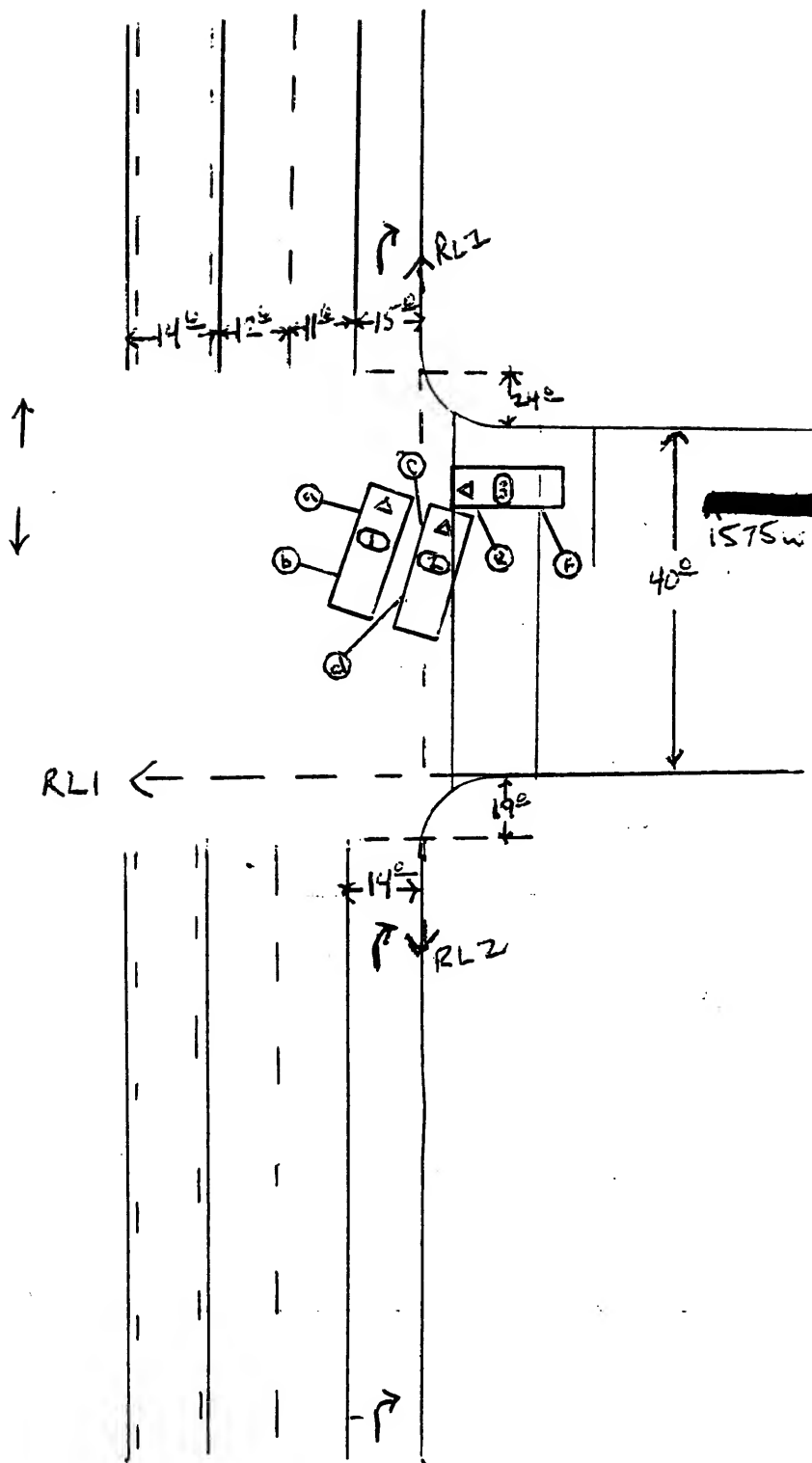


DIAGRAM WHAT HAPPENED BELOW.

CASE NUMBER _____

BEST AVAILABLE

Reason For No Diagram _____

INDICATE DIRECTION
OF NORTH

VEHICLE NO. _____ NO. _____

1 Officer not at scene

Vehicles moved _____

Other _____

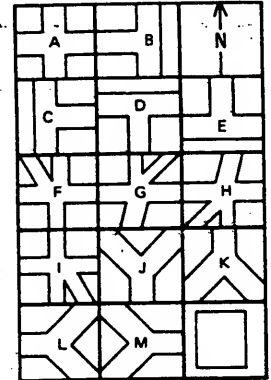


ESTIMATED TRAVEL SPEED

ESTIMATED IMPACT SPEED

POSTED SPEED

ADVISORY SPEED



INDICATE INTERSECTION TYPE

DESCRIBE WHAT HAPPENED
(Refer to Vehicle by Number)

This R/O contacted the driver of Veh#2 who stated that she was proceeding east bound on _____ at _____ when a Ford Bronco suddenly appeared in front of her as it was turning left from west bound _____ on to _____ for south bound. The driver of Veh#2 stated that traffic was backed up and stopped in the east bound through lanes - thus blocking her view of Veh#1 until that vehicle was blocking her lane. R/O photographed the intersection from several angles and also both vehicles were photographed. It is clear that Veh#2 had the right of way and that Veh#1 failed to yield right of way to Veh#2 while turning left. R/O will seek a complaint via the city attorney against the driver of Veh#1.

If Hazardous Materials were involved list the placard number from off the commercial vehicle:

DAMAGE TO PROPERTY
OTHER THAN VEHICLES

Name object and state nature and amount of damage

\$

ESTIMATE

Name and address of
owner of object struck

WITNESSES

Name _____ Address _____ Phone _____
Name _____ Address _____ Phone _____

FIRST AID ADMINISTERED BY

EMS REPORT NO.

INJURED TAKEN BY

- 1- Ambulance, Private
- 2- Ambulance, Fire
- 3- Paramedics
- 4- Private Vehicle
- 5- Helicopter
- 6- Other

TIME: Amb. Called: _____ Arrived: _____

- 1- Policeman
- 2- Fireman
- 3- Ambulance Personnel
- 4- Paramedics
- 5- Doctor
- 6- Private Individual
- 7- Hospital
- 8- Helicopter Personnel
- 9- None Administered
- 0- Unknown

EMS REPORT NO.

INJURED TAKEN TO

DATE ACTIVITY

Month _____ Day _____ Year _____
Time Notified of Accident _____

Source of Information

Officer at scene _____
Driver No. _____ Contacted station _____
Other _____

PHOTO(S) TAKEN
YES ☐ NO ☐
VIDEO TAKEN
YES ☐ NO ☐
FIELD DIAGRAM
YES ☐ NO ☐

(USE MILITARY TIME)

Arrived at Scene _____ Investigation of accident Completed at _____ of _____ the same day ☐ the _____ day following ☐

WITNESSES CONTINUED

Name _____ Charge: _____
Name _____ Charge: _____

VSA Inspection: Yes ☐ No ☐ If Yes, Report Number _____
Other action taken _____

PRINT

OFFICER'S RANK AND NAME _____ ID. NO. _____ PATROL DIVISION _____ DEPARTMENT _____ SUPERVISORS APPROVAL _____ DATE OF REPORT _____

State Law requires that report be forwarded to Dept. of Public Safety within 10 days following completion of the investigation. Mail ORIGINAL OF REPORT TO:
Driver License Division Financial Responsibility

TIME		MONTH DAY YEAR			DAY OF WEEK		1 2 3 4 5 6 7 M T W T F S S							MILITARY TIME		CASE NUMBER		15			
																BEST AVAILABLE		16			
																FOR AGENCY USE		17			
																D.L.D. USE ONLY		18			
																STATE/LOCAL		19			
																		20			
																		21			
																		22			
LOCATION		PLACE WHERE ACCIDENT OCCURRED: COUNTY CITY OR TOWN														FOR AGENCY USE		15			
		Accident was outside city limits indicate distance from city limits or nearest town MILES NORTH S E W of CITY OR TOWN																			
LOCATION		ROAD ON WHICH ACCIDENT OCCURRED: RAMP NO. GIVE NAME OF STREET OR HIGHWAY NUMBER INTERSECTION TYPE														FOR AGENCY USE		16			
		1. AT ITS INTERSECTION WITH 2. IF NOT AT INTERSECTION NORTH S E W of NEAREST INTERSECTION, STREET, HOUSE NO. LANDMARK BE SURE TO COMPLETE IF ROAD HAS MILE POST TENTH OF A MILE																			
1		VEHICLE YEAR		MAKE		MODEL		BODY STYLE/TYPE CODE		VEHICLE COLOR		G.V.W.R.		DESC. OF CARGO CODE		COMMERCIAL VEHICLE (Reg 12,000 lbs. or more) INTERSTATE INTRASTATE		23			
		3		96		Saturn		SL		- 102		BLK 7m						5			
		VEHICLE IDENTIFICATION NUMBER DISPOSITION OF VEHICLE CODE														NO. OF AXLES (INCLUDING ALL TRAILERS) DIR OF TRAVEL		24			
																2		N.			
		US DOT		LIC. PLATE INFO		YEAR		MONTH		STATE		NUMBER		PARTS DAMAGED		COST OF REPAIR		25			
		ICC MC		97		1		UT						1		0000		03			
2		OWNER		FIRST		INITIAL		LAST		STREET, CITY, STATE, ZIP, PHONE NO.		PHONE ()						26			
		OPERATOR																27			
		CARRIER																28			
7		DRIVER		FIRST		INITIAL		LAST		STREET, CITY, STATE, ZIP, PHONE NO.		PHONE						29			
		STATE		NUMBER		DATE OF BIRTH		MONTH DAY YEAR		AGE SEX		SAFE EQUIP TYPE		INJURY CAUSE AREA		EXTR CAUTION EJECTION		30			
		1		2		2		2		18		21		X X O 1				1			
		DRIVER'S EDUCATION		1. PUBLIC 3. NONE 2. COMFL 4. UNKN		YEARS DRIVE EXP.		LICENSE CLASS		ENDORSEMENT		RESTRICTIONS						31			
				2		2		D		-		A						2			
		INSURANCE COMPANY		EFFECTIVE DATE		EXPIRATION DATE		POLICY NUMBER										32			
		INSURANCE APPEARS VALID		AGENCY THAT SOLD POLICY		ADDRESS		PHONE ()										33			
		YES		NO														34			
3		VEHICLE YEAR		MAKE		MODEL		BODY STYLE/TYPE CODE		VEHICLE COLOR		G.V.W.R.		DESC. OF CARGO CODE		COMMERCIAL VEHICLE (Reg 12,000 lbs. or more) INTERSTATE INTRASTATE		35			
		#																36			
		VEHICLE IDENTIFICATION NUMBER DISPOSITION OF VEHICLE CODE														NO. OF AXLES (INCLUDING ALL TRAILERS) DIR OF TRAVEL		37			
																		38			
1		US DOT		LIC. PLATE INFO		YEAR		MONTH		STATE		NUMBER		PARTS DAMAGED		COST OF REPAIR		39			
		ICC MC		97		1		UT						1		0000		30			
10		OWNER		FIRST		INITIAL		LAST		STREET, CITY, STATE, ZIP, PHONE NO.		PHONE ()						35			
		OPERATOR																36			
		CARRIER																37			
3		DRIVER		FIRST		INITIAL		LAST		STREET, CITY, STATE, ZIP, PHONE NO.		PHONE ()						38			
		STATE		NUMBER		DATE OF BIRTH		MONTH DAY YEAR		AGE SEX		SAFE EQUIP TYPE		INJURY CAUSE AREA		EXTR CAUTION EJECTION		39			
		1		2		2		2		18		21		X X O 1				1			
		DRIVER'S EDUCATION		1. PUBLIC 3. NONE 2. COMFL 4. UNKN		YEARS DRIVE EXP.		LICENSE CLASS		ENDORSEMENT		RESTRICTIONS						31			
				2		2		D		-		A						2			
		INSURANCE COMPANY		EFFECTIVE DATE		EXPIRATION DATE		POLICY NUMBER										32			
		INSURANCE APPEARS VALID		AGENCY THAT SOLD POLICY		ADDRESS		PHONE ()										33			
		YES		NO														34			
		1. PEDESTRIAN		2. BICYCLIST		DATE OF BIRTH		AGE SEX		INJURY		TYPE CAUSE AREA						35			
																		36			
		NAME		ADDRESS														37			
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																		100			

ORIGINAL REPORT

SUPPLEMENTAL REPORT

AMENDED REPORT

DIAGRAM WHAT HAPPENED BELOW.

CASE NUMBER

BEST AVAILABLE

Reason For No Diagram

1 Officer not at scene

Vehicles moved

3 Other

INDICATE DIRECTION OF NORTH



VEHICLE NO. 1 NO. 2

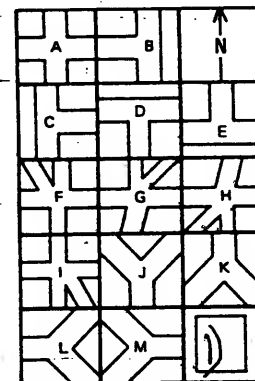
ESTIMATED TRAVEL SPEED

ESTIMATED IMPACT SPEED

POSTED SPEED

ADVISORY SPEED

5	20
5	20
—	—
—	—



INDICATE INTERSECTION TYPE

DESCRIBE WHAT HAPPENED (Refer to Vehicle by Number)

Vehicle #1 was turning left from the vehicle #1 made his turn between stopped vehicles on then made contact with vehicle #2. Vehicle #2 was heading east bound on in the right hand turn lane when it made contact with vehicle #1. Vehicle #2 was heading straight and then hit with #1 and then hit vehicle #3 that was parked northbound on

Driver of vehicle #1 stated he was turning left through stopped traffic when vehicle #2 hit him. Driver of vehicle #2 stated she was heading straight so that she could turn on the when vehicle #1 pulled in front of her.

If Hazardous Materials were involved list the placard number from off the commercial vehicle:

DAMAGE TO PROPERTY OTHER THAN VEHICLES

Name object and state nature and amount of damage

ESTIMATE

Name and address of owner of object struck

WITNESSES

Name Address Phone Name Address Phone

FIRST AID ADMINISTERED BY

EMS REPORT NO.

INJURED TAKEN BY

- 1-Ambulance, Private
- 2-Ambulance, Fire
- 3-Paramedics
- 4-Private Vehicle
- 5-Helicopter
- 6-Other

TIME: Amb. Called:

Arrived:

- 1-Policeman
- 2-Fireman
- 3-Ambulance Personnel
- 4-Paramedics
- 5-Doctor
- 6-Private Individual
- 7-Hospital
- 8-Helicopter Personnel
- 9-None Administered
- 0-Unknown

EMS REPORT NO.

INJURED TAKEN TO

POLICE ACTIVITY

Date Notified of Accident

Source of Information

Officer at scene

Driver No.

Contacted station

Other

PHOTO(S) TAKEN YES NO

VIDEO TAKEN YES NO

FIELD DIAGRAM YES NO

USE MILITARY TIME

Time Notified of Accident

Arrived at Scene

Investigation of accident

Completed at

of

the same day

the

day following

Name Charge Name Charge

VSA Inspection Yes No

If Yes, Report Number

PRINT OFFICER'S RANK AND NAME I.D. NO. PATROL DIVISION DEPARTMENT SUPERVISORS APPROVAL DATE OF REPORT

State Law requires that report be forwarded to Dept. of Public Safety within 10 days following completion of the investigation. Mail ORIGINAL OF REPORT TO: Driver License Division Financial Responsibility

DIAGRAM WHAT HAPPENED BELOW.

CASE NUMBER

BEST AVAILABLE

Reason For No Diagram

INDICATE DIRECTION OF NORTH

VEHICLE NO. 3 NO.

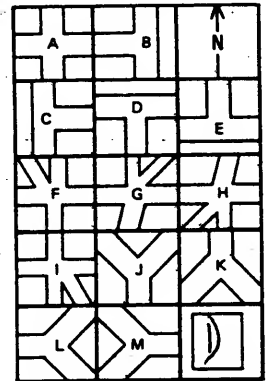


ESTIMATED TRAVEL SPEED

ESTIMATED IMPACT SPEED

POSTED SPEED

ADVISORY SPEED



INDICATE INTERSECTION TYPE

DESCRIBE WHAT HAPPENED
(Refer to Vehicle by Number)

DAMAGE TO PROPERTY
OTHER THAN VEHICLES

Name object and state nature and amount of damage

ESTIMATE

Name and address of
owner of object struck

If Hazardous Materials were involved
list the placard number from off the
commercial vehicle:

WITNESSES

Name

Address

Phone

Name

Address

Phone

FIRST AID ADMINISTERED BY

EMS REPORT NO.

INJURED TAKEN BY

1- Ambulance, Private

2- Ambulance, Fire

3- Paramedics

4- Private Vehicle

5- Helicopter

6- Other

TIME: Amb. Called:

Arrived:

- 1- Policeman
- 2- Fireman
- 3- Ambulance Personnel
- 4- Paramedics
- 5- Doctor
- 6- Private Individual
- 7- Hospital
- 8- Helicopter Personnel
- 9- None Administered
- 0- Unknown

EMS REPORT NO.

INJURED TAKEN TO

OFFICE ACTIVITY

Date Notified of Accident

Month Day Year

Time Notified of Accident

Arrived at Scene

Investigation of accident

Completed at

of the same day

the

day following

Source of Information

Officer at scene

Driver No.

Contacted station

Other

PHOTO(S) TAKEN
YES ☒ NO ☐

VIDEO TAKEN
YES ☐ NO ☒

FIELD DIAGRAM
YES ☒ NO ☐

Name

Charge

Name

Charge

VSA Inspection Yes No

If Yes, Report Number

Other action taken

PRINT

OFFICER'S RANK AND NAME

I.D. NO.

PATROL DIVISION

DEPARTMENT

SUPERVISORS APPROVAL

DATE OF REPORT

State Law requires that report be forwarded to Dept. of Public Safety within 10 days following completion of the investigation. Mail ORIGINAL OF REPORT TO:
Driver License Division Financial Responsibility

[illegible]

Re: 1995 Pontiac Grand Prix
VIN:

Dear

This letter is in response to your request that GM provide information about the data stored in the Sensing Diagnostic Module (SDM) of the subject vehicle.

On _____ printed the data stored by the SDM in the subject vehicle. The SDM is the electrical component of the Supplemental Inflatable Restraint (SIR) system that functions to diagnose and record SIR information. The following information was determined through analysis and interpretation of the SDM data.

* The SDM recorded and stored a CRASH EVENT which contains the following information:

- The SIR Warning Light was OFF at the time of the deployment.
(no malfunctions)
- The SIR Warning Light was not ON prior to the accident.
(no malfunctions)
- There were three SIR system codes stored in memory.
(these codes are associated with a normal air bag deployment event)
- The air bags deployed 38.75 milliseconds after the collision was first detected by the SDM.
- The maximum change in velocity (Delta V) the SDM recorded was 13.27 mph.
- The accident occurred on ignition cycle number 3748. This is eleven (11) cycles prior to when the SDM was read on (3759).
- This was the first Deployment Crash Event for this vehicle.
- The drivers seat belt was latched at the time the deployment occurred.

Please do not hesitate to contact me if you have any questions.